Chula Vista Green Building Standards

Per Chula Vista Municipal Code Chapter 15.12, Green Building Standards, the following green building measures shall apply to all new residential construction, remodels, additions, and alterations, and to all new nonresidential construction, remodels, additions, and tenant improvements.

Definitions

"Building Official" means the officer or other designated authority charged with the administration and enforcement of this chapter, or duly authorized representative.

"Composite wood products" include hardwood plywood, particleboard, and medium density fiberboard. Composite wood products does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber as specified in "Structural Glued Laminated Timber" (ANSI A190.1-2002) or prefabricated wood I-joists.

"Energy Code" means the California Energy Code, as adopted and amended by the City in Chapter 15.26 of the Municipal Code.

"Green Building" means a holistic approach to design, construction, and demolition that minimizes the building's impact on the environment, the occupants, and the community.

"Infiltration" means an uncontrolled inward air leakage from outside a building or unconditioned space, including leakage through cracks and interstices, around windows and doors and through any other exterior or demising partition or pipe or duct penetration.

"MERV" means filter minimum efficiency reporting value, based on ASHRAE 52.2-1999.

"Moisture content" means the weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

"Outdoor Air" (Outside air) means air taken from outdoors and not previously circulated in the building.

"VOC" means volatile organic compound and is broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See California Code of Regulations (CCR) Title 17, Section 94508(a).

Standards

Buildings and building sites shall be designed to include the following green building measures:

A. Storm Water Management and Discharge Control. Municipal Code Section 14.20

B. Construction Waste Reduction, Disposal and Recycling. Municipal Code Section 8.25.095

C. Energy Efficiency. Buildings shall meet the requirements of the Chula Vista Municipal Code Section15.26

D. Air Sealing.

1. Joints and openings. Openings in the building envelope separating conditioned space from unconditioned space must be sealed by a method acceptable to the building official.
2. Other openings. Whole house exhaust fans shall have insulated louvers or covers that close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.

E. Water Use

1. Indoor Water Use

a. 20% Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20% shall be provided. The reduction in potable water use shall be demonstrated by one of the following methods.

i. A calculation demonstrating a 20% reduction in the building "water use baseline" as established in Table 1 shall be provided, or

ii. Each plumbing fixture and fitting shall meet the 20% reduced flow rate specified in Table 2

b. Multiple showerheads serving one shower shall not exceed the maximum flow rates specified in the 20% reduction column contained in Table 2 or the shower shall be designed to only allow one showerhead to be in operation at a time.

TABLE 1
WATER USE BASELINE

Fixture Type	**Flow-rate[2]**	**Duration**	**Daily uses**	**Occupants [3,4]**
Showerheads	2.5 gpm @ 80 psi	8 min.	1	X
Showerheads Residential	2.5 gpm @ 80 psi	8 min.	1	X
Lavatory Faucets Residential	2.2 gpm @ 60 psi	0.25 min.	3	X
Kitchen Faucets	2.2 gpm @ 60 psi	4 min.	1	X
Replacement Aerators	2.2 gpm @ 60 psi			X
Wash Fountains	2.2 [rim space (in.) / 20 gpm @ 60 psi]			X
Metering Faucets	0.25 gallons/cycle	.25 min.	3	X
Metering Faucets for Wash Fountains	.25 [rim space (in.) / 20 gpm @ 60 psi]	.25 min.		X
Gravity tank type Water Closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer Tank Water Closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer Valve Water Closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Electromechanical Hydraulic Water Closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Urinals	1.0 gallons/flush	1 flush	2 male	X

Fixture "Water Use" = Flow rate x Duration x Occupants x Daily uses

[1] Except for low-rise residential occupancies, the daily use number shall be increased to three if urinals are not installed in the room.

[2] The Flow-rate is from the CEC Appliance Efficiency Standards, Title 20 California Code of Regulations; where a conflict occurs, the CEC standards shall apply.

[3] For low rise residential occupancies, the number of occupants shall be based on two persons for the first bedroom, plus one additional person for each additional bedroom.

[4] For non-residential occupancies, refer to Table A, Chapter 4, 2007 California Plumbing Code, for occupant load factors.

TABLE 2
FIXTURE FLOW RATES

Fixture Type	Flow-rate	Maximum flow rate at 20% Reduction
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Lavatory Faucets Residential	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Kitchen Faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Wash Fountains	2.2 [rim space (in.) / 20 gpm @ 60 psi]	1.8 [rim space (in.) / 20 gpm @ 60 psi]
Metering Faucets	0.25 gallons/cycle	0.2 gallons/cycle
Metering Faucets for Wash Fountains	0.25 [rim space (in.) / 20 gpm @ 60 psi]	0.20 [rim space (in.) / 20 gpm @ 60 psi]
Gravity tank type Water Closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer Tank Water Closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer Valve Water Closets	1.6 gallons/flush	1.28 gallons/flush[1]
Electromechanical Hydraulic Water Closets	1.6 gallons/flush	1.28 gallons/flush[1]
Urinals	1.0 gallons/flush	0.8 gallons/flush

[1] Includes water closets with an effective flush rate of 1.28 gallons or less when tested per ASME A112.19.2 and ASME A112.19.14.

F. Pollutant Control

1. Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered to reduce the amount of dust or debris which may collect in the system.

2. Finish material. Finish materials shall comply with the following:

a. Adhesives and sealants. Adhesives used on the project shall meet the following requirements:

i. Aerosol adhesives shall meet the requirements of California Code of Regulations, Title 17, commencing with Section 94507.

ii. Adhesives, adhesive primers, and bonding primers shall comply with Table 3

Table 3
Adhesive VOC Limit. Less Water and Less Exempt Compounds in Grams per Liter

Architectural Applications	VOC Limit
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250

b. Paints and coatings. Architectural paints and coatings shall comply with Table #4

Table 4
Coating VOC Limits
Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

Coating Category	Limit
Bond Breakers	350
Clear Wood Finishes Varnish Sanding Sealers Lacquer	275 275 275 275
Clear Brushing Lacquer	275
Concrete-Curing Compound	100
Dry-Fog Coatings	150
Fire-Proofing Exterior Coatings	350
Flats	50
Floor Coatings	50
Graphic Arts (Sign) Coatings	500
Industrial Maintenance (IM) Coatings High Temperature IM Coatings Zinc-Rich IM Primers	100 420 100
Japans/Faux Finish Coatings	350
Magnesite Cement Coatings	450
Mastic Coatings	300
Metallic Pigmented Coatings	500
Multi-Color Coatings	250
Nonflat Coatings	50
Pigmented Lacquer	275
Pre-Treatment Wash Primers	420
Primers, Sealers, and Undercoaters	100
Quick-Dry Enamels	50
Quick-Dry Primers, Sealers, and Undercoaters	100
Recycled Coatings	250
Roof Coatings Roof Coatings, Aluminum	50 100
Roof Primers, Bituminous	350
Rust Preventative Coatings	100
Shellac Clear Pigmented	 730 550
Specialty Primers	100
Stains Interior	100 250
Swimming Pool Coatings Repair Other	 340 340
Waterproofing Sealers	100
Waterproofing Concrete/Masonry Sealers	100
Wood Preservatives Below-Ground Other	 350 350

Verification of compliance with this section shall be provided at the request of the building official. Documentation may include, but not limited to, the following:

a. Manufacturers product specification.
b. Field verification of on-site product containers.

3. Carpet systems.
   a. All carpet installed in the building interior shall meet the testing and product requirements of one of the following:
      i. Carpet and Rug Institute's Green Label or Green Label Plus Program.
      ii. CA Dept. of Public Health Standard Practice for the testing of VOCs (Specification 01350).
      iii. Department of General Services, California Gold Sustainable Carpet Standard.
      iv. Scientific Certifications Systems Indoor Advantage™ Gold.
   b. Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.
   c. Carpet adhesive. All carpet adhesive shall meet the requirements of Table 3.

4. Composite wood products. Hardwood, plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.

Table 5
Formaldehyde Limits
Maximum formaldehyde emissions in parts per million

Phase 1		Phase 2			
Product	Current Limits	Jan 1, 2010	Jan 1, 2011	Jan 1, 2012	Jul 1, 2012
Hardwood Plywood Veneer Core	0.08	0.05			
Hardwood Plywood Composite Core	0.08				0.05
Particle Board	0.18		0.09		
Medium Density Fiberboard	0.21		0.11		
Thin Medium Density Fiberboard (max. thickness of 8 mm)	0.21			0.13	

Documentation. Verification of compliance with this section shall be provided as requested by the building official. Documentation shall include at least one of the following.

a. Product certifications and specifications.
b. Chain of custody certifications.
c. Other methods acceptable to the building official.

G. Indoor Moisture Control

1. Moisture content of building materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Moisture content shall be verified in compliance with the following.

   a. Moisture content shall be determined with either a probe-type or a contact-type moisture meter.

b. Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified.
c. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the building official provided at the time of approval to enclose the wall and floor framing.

H. Indoor Air Quality and Exhaust
1. Bathroom exhaust fans. Mechanical exhaust fans required in rooms containing a bathtub, shower, or tub shower combination shall be ENERGY STAR compliant and shall terminate outside the building.

2. Filters. Heating and air conditioning filters shall be rated at MERV 6 or higher. Duct system design shall account for pressure drop across the filter.

I. Operation and Maintenance manual. At time of final inspection of a new residential or commercial building, the builder shall place in the building an Operation and Maintenance manual that is acceptable to the Building official. It shall contain directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.